A Guide to Integrating Conservation Planning and Transportation Planning and SAFETEA-LU 6001- metropolitan/local regional planning

prepared by the U.S. Fish and Wildlife Service, Pacific Southwest Region

INTRODUCTION

This guide is to assist metropolitan/regional transportation planners in achieving their SAFETEA-LU 6001 obligations under 23 CFR §450.214(j) and §450.322(f) (7) which describe development of long-range statewide transportation plans and metropolitan transportation plans. These sections state that plans shall include a discussion of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the long-range statewide transportation plan. They further state that the discussion may focus on policies, programs, or strategies, rather than at the project level and the discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies.

Our recommendations are specific to the laws administrated by the U.S. Fish and Wildlife Service (Service), for potential impacts to listed species in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (ESA); to migratory birds in accordance with the Migratory Bird Treaty Act, as amended (16 U.S.C. 703 *et seq*.) (MBTA); and to bald and golden eagles in accordance with the Bald Eagle and Golden Eagle Protection Act (16 U.S.C. 668-668c) (BGEPA). Our goal is to assist you during the planning process by understanding these laws and their implementing regulations so that you may be able to anticipate and incorporate avoidance, minimization, and mitigation measures when possible in the early planning stages of transportation plans. By integrating conservation planning into early transportation planning, both types of planning can be better achieved in less time and at less cost (White 2004). Considering natural resource conservation specific to fish, wildlife, and plant protection and conservation, in the planning of metropolitan/regional transportation plans will help expedite and facilitate evaluation by the Service of proposed projects.

Note: Throughout this document we discuss 'listed' species. Because this document is written by the Service, we are referring to federally listed species. However, any of the concepts also apply to other special status species such as state listed species.

Ecosystem Approach

An informative guide, *Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects*, (U.S. Department of Transportation 2006) provides an overview of how transportation agencies and resource agencies may coordinate and it may provide a starting point in identifying and

addressing conservation needs associated with the development of infrastructure projects. It was developed by a team representing eight federal agencies and four state transportation departments. The goals of an ecosystem approach to mitigation and to infrastructure projects are: to conserve larger, scarce, multi-resource ecosystems; increase habitat connectivity; improve predictability in environmental review and regulatory processes; provide better public involvement to improve transparency and establish greater credibility; and to streamline infrastructure planning and project delivery. This guide was used by an interagency group in Montana to create the "Integrated Transportation and Ecosystem Enhancements for Montana" (ITEEM) process. This report summarizes Montana's efforts to adapt Eco-Logical to create the ITEEM process and offers insights for other interagency efforts working to increase the efficiency of transportation project delivery while mitigating adverse impacts where the conservation efforts are most needed (Western Transportation Institute 2007).
Other examples and more information may be found on the FHWA website http://www.environment.fhwa.dot.gov/index.asp .

The Service supports this ecosystem/regional approach to transportation planning by integrating conservation and planning at a landscape/regional level. As part of a larger Department of the Interior initiative, the Service has commenced a new "Landscape Conservation Cooperatives" (LCCs) program, designed to bring together various partners across broad regions to improve the resiliency of ecosystems and species affected by climate change. LCCs provide scientific and technical support for conservation at "landscape" scales. They support biological planning, conservation design, prioritizing and coordinating research, and designing species inventory and monitoring programs. LCCs also have a role in helping partners identify common goals and priorities to target the right science in the right places for efficient and effective conservation. By functioning as a network of interdependent units rather than independent entities, LCC partnerships can accomplish a conservation mission no single agency or organization can accomplish alone. They may also be useful in the development of Regional Transportation Plans (RTPs)and identifying considerations of natural resources early in the planning process.

RECOMMENDATIONS

We encourage engaging in early, collaborative interagency planning to identify ecologically important natural resources that should be protected and avoided, or to minimize adverse impacts, while flexibility still exists. The following are a few topics to consider during your planning process and development of long-range transportation planning documents. They are intended to be a starting point for discussion and not an all-inclusive list of recommendations for integrating conservation into the planning process.

Integrating Natural Resources into Long Term Planning

Part of the intent of SAFETEA-LU is to promote streamlining of environmental considerations throughout the transportation planning and construction process. The following are some tips on how to include this intent early in planning. Integrating natural resource considerations early in planning can influence the process as you near construction.

1) Consider incorporating the objective of minimizing natural resource impacts in the Purpose and Need Statement. The purpose and need should not be so narrowly or broadly defined that alternatives could be designed in a way that allows development in higher-function habitat areas for listed and sensitive species, while lower function habitats remain undeveloped.

2) Conduct a system or corridor-level analysis of the affected environment, environmental impacts, indirect and cumulative impacts. Corridor or sub-area studies help screen, evaluate or eliminate alternatives.

3) Consider preserving natural resources as one of the primary goals of the regional development format (Minnesota Dept. of Natural Resources 2006).

4) Consider any available conservation plans with the same weight as General Plans when planning transportation investments.

5) Ensure compatibility with neighboring land uses by considering compatibility early in the transportation planning and land use decision-making process.

6) Incorporate adaptive management strategies to capitalize on the progressive understanding of ecological systems and management practices, apply lessons learned from current and future projects and research studies, address uncertainties or unknowns within the current scope of knowledge, and improve progress towards desired outcomes. Example: addressing foreseeable impacts due to or exacerbated by global climate change.

7) Maintain compatibility and/or integrate with other existing plans such as setting goals or targets to help measure your compatibility with other existing plans, or by evaluating different scenarios based on their effects to the environment and gauging whether the strategies you have set are compatible.

8) Incorporate green infrastructure planning and define an approach that maximizes sustainability in all phases—from "cradle to grave."

- Infrastructure planning - Coordinate of blueprint and greenprint plans to develop alternatives with least impacts to special status (such as listed) species. This may be a GIS analysis to compare plans and identify potential concern areas.
- Development/Construction – Use best management practices and techniques to avoid, minimize, and mitigate impacts to listed species and their habitats. Utilize engineers to design project specifications for the desired end product of the conservation needs, while designing roadways. This may be a strategy included in a RTP.
- Operations/Maintenance – Use best management practices to avoid, minimize, and mitigate impacts to listed species and their habitats. This may be another strategy used in an RTP.
- Demolition – Recycle/reuse materials from rehabilitated infrastructure, habitat restoration, etc.

Early Coordination

1) Engage resource agencies in early, collaborative interagency planning to identify ecologically important natural resources that should be protected and avoided, while flexibility still exists in how the region is planning to grow.

In a recent government report, *Highways and Environment: Transportation Agencies Are Acting to Involve Others in Planning and Environmental Decisions*, (Government Accountability Office 2008), several challenges were cited in getting such input, including (1) the limited availability of funding and staff at resource agencies; (2) limited incentives for resource agencies to contribute during planning, since early involvement is not part of these agencies' missions or experience; and (3) unfamiliarity on the part of resource agencies and planners with each other's roles and processes. State Department of Transportation and Metropolitan Plan Organization (MPO) planners' progress in developing consultation relationships with resource agencies has varied, and those that had strong prior relationships with resource agencies are advancing more quickly.

Getting resource agencies to the table to participate in early coordination at landscape level planning can be difficult. The regulatory aspect of the ESA can promote a reactive, rather than a proactive, approach. It may be helpful for the planning agency to provide the Service with opportunities for early engagement, including orienting meetings specifically to address the Service's responsibilities and issues. As a part of active engagement, we suggest MPOs outline how they are anticipating the Service's early coordination. However, the LCC Program, discussed in the introduction, may provide a new avenue of approach by the MPOs for engaging in meaningful discussion.

2) When ecologically important natural resources cannot be avoided, focus on methods to minimize and mitigate impacts. Through scenario planning, it could be helpful to develop and compare alternatives for growth when considering natural resource protection. An example of this method is discussed in the next section of this document.

Evaluating Regional Scenarios Based on Considerations of Environmental Resources/Identifying Costs of Mitigation

Scenario planning provides a forum, process, set of tools, and measurable outcomes for communities of all sizes to consider future growth possibilities. In scenario planning, stakeholders consider several plausible future growth scenarios for a region, assuming a pre-defined planning horizon. We encourage the integration of natural resource conservation and protection strategies as part of the regional planning process. A potential strategy alternative could focus on natural resource conservation and protection, such as the environmental protection scenario used in a Sustainable Study and 2020 Growth Scenarios for Paris Township in Ohio in Chapter 5 of the Portage County Zoning Study (Portage County Planning Commission 2007).

For example, scenario planning was used by several counties in the San Joaquin Valley, which entered into a partnership with the University of California (UC) Davis. The Information Center for the Environment (ICE) at UC Davis provided geographic information system (GIS) data and growth allocation build-out scenarios. The region faces many challenges with respect to its capacity to accommodate a dramatic increase in population while maintaining its environmental infrastructure and preserving its diminishing natural resources. In this study, all scenarios applied the same set of parameters, including specifically identified natural resource conservation/protection parameters (Beardsley, Roth, and McCoy 2007). The use of data in scenario planning and outreach during the RTP process can help integrate natural resources into the decision making process early.

Conservation Measures: Avoidance, Minimization, Compensation/Mitigation

The National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq*.) (NEPA) and the ESA, require incorporation of avoidance and minimization measures. The first tier is avoidance, and for transportation agencies, this could be as simple as choosing an alternative that avoids a sensitive resource, such as a wetlands area. The second tier is minimization, which means that if avoidance is not possible, then the transportation agency takes action to minimize impact to the sensitive resource. For example, spanning a stream or wetlands area would have considerably less impact than re-channeling the stream or filling the wetlands. Sometimes avoidance and simple minimization measures may not be considered adequate for the level of impacts and additional conservation in the form of preservation or restoration may be warranted.

Incorporating conservation measures to avoid and minimize adverse effects to threatened and endangered species and migratory birds when possible at the regional planning level and/or identifying potential implementation strategies can help expedite the subsequent permitting process while promoting the conservation of natural resources.

1) Design or identify potential conservation measures at the planning level. These may include:

- avoiding adverse effects altogether;
- minimizing or reconfiguring the proposed activity/project size;
- precautionary and/or abatement measures to reduce construction impacts and rectify impacts (restoring temporary impacts);
- employing special features or operational management measures to reduce impacts, e.g. construction timing restrictions; and/or
- compensating for unavoidable environmental impacts by providing suitable, replacement or substitute environmental resources of equivalent or greater value, on or off-site.

2) Consider aggregating multiple projects with similar impacts in which on-site conservation measures are not reasonable or sufficient, and look for relatively large off-site habitat conservation opportunities. These may offer greater conservation potential with respect to buffer protection and may provide multiple environmental habitat values, e.g. wetlands, plant and wildlife.

Habitat Connectivity/Fragmentation

Habitat fragmentation reduces both the quantity and quality of habitat. Fragmentation is a process whereby large tracts of the natural landscape are gradually developed and subdivided until only patches of original habitat remain. The patches are often too small and too far apart to support the

basic survival and reproductive needs of many wildlife species during various stages of their life-cycle or in different times of the year. When a species' habitat is separated by distances that make movement from one patch to another impossible, the impacts (including genetic impacts) on the population are significant and reduce a species ability to reproduce and withstand stress. In addition, smaller habitat patches and the wildlife that depend on them are more vulnerable to the catastrophic effects of natural disturbances such as fire. Fragmentation also results in higher populations of generalist predators, resulting in increased predation on those species that attempt to use the remaining habitat blocks.

The impact of human activity on wildlife extends beyond the actual area of development. When evaluating the impact of human activity on wildlife, we should consider a "disturbance zone"-the entire area where habitat value has been meaningfully reduced. The encroachment of human activity into a natural area creates more "edge effects." Edge effects are changes in environmental conditions and animal behavior and well-being that result from being in close proximity to the border between habitat areas. Unlike natural borders, human disturbances often create "harder" edges with greater detrimental impacts on wildlife. Even seemingly small manmade disturbances, such as power line easements, can have major consequences for wildlife.

In addition, the encroachment of human activity reduces the amount of interior habitat area relative to edge or border area. While borders between two different habitats are often an essential part of the ecology of an area, when habitat becomes so small that it has a relatively large edge and little interiors, it loses its ability to support those species that require an isolated interior for some portion of their life. Landscape disturbance caused by development can also serve to introduce invasive species into natural habitats, further degrading the quality of remaining habitat areas (New Hampshire Department of Environmental Services 2004).

To effectively mitigate/compensate for potentially significant adverse effects due to habitat fragmentation, careful planning is needed in the placement and configuration of transportation corridors. Thoughtful planning for listed species such as San Joaquin kit fox, desert tortoise and bighorn sheep that require vast acreages to maintain viable populations would likely confer conservation benefits to less widely distributed species as well.

The programmatic scale of the planning effort allows for the application of a consistent set of avoidance/minimization measures at the individual project level. Successful dispersal and movement of plant and animals seems to correlate with landscape linkages that contain species-specific habitat components such as food, water, and cover. By ‘successful dispersal’ we mean the movement of a plant or animal to a patch of habitat where it can survive and reproduce.

1) When evaluating habitat connectivity/wildlife movement corridors consider:

- utilizing existing habitat connectivity mapping and strategy efforts
    - example: California Essential Habitat Connectivity Project, a California Department of Transportation (Caltrans) and California Department of Fish and Game's (CDFG) multi-agency collaborative project which developed a Statewide wildlife habitat connectivity map and strategy to help infrastructure, land use, and conservation planners. Final Products are available at http://www.dfg.ca.gov/habcon/connectivity/.
    - see other habitat connectivity mapping projects listed under Information Sources below.
- how the designed roadways may fragment species habitat or create a barrier;
- identifying and prioritizing habitat preservation and restoration opportunities and landscape linkages;
- building wildlife crossings, including overpasses, underpasses, and culverts, where necessary to repair ecological damage and restore habitat connectivity; and
- incorporating environmental buffers designed to protect the natural habitat area.

Natural Resources Plan

Consider developing a natural resources plan (Minnesota Department of Natural Resources 2006).

1) *Natural Resource Inventory*: Identify the location and character of important natural resources such as wetlands, endangered species, oak-woodlands, etc. on a GIS-based map.
2) *Determine the priority natural resource areas*: In collaboration with the Service, identify criteria for ranking important resources; prioritize areas, and create a priority map.
3) *Develop strategies to protect those specific priority resources*.
4) *Identify how those strategies will be implemented*; (conservation easements, ordinances, etc.): For example, lands acquired for mitigation purposes to offset adverse permanent effects from development usually require a conservation easement in perpetuity, a long term management plan, and an endowment funding strategy and amount to ensure that adequate funds will be available to fund the management of the conservation lands in perpetuity.

Ecosystem Approach – Regional Conservation Strategy

1) Integrate ecosystem-based conservation planning into long-term transportation planning. An ecosystem approach:

- allows for more efficient and cost-effective ways to avoid and minimize impacts to fish, wildlife, and plants;
- identifies cumulative effects on regional resources such as water, air, and habitat connectivity;
- identifies areas of ecological importance;
- identifies functioning ecosystems;
- capitalizes on opportunities for meaningful mitigation and conservation; and
- provides funding in the RTP for anticipated mitigation which can reduce delays and unforeseen costs during project delivery.

2) Integrate an ecosystem strategy approach into corridor studies expected over the life of your long-term transportation plan. Project-by-project conservation measures often overlook regional and ecosystem scale impacts to sensitive species and habitat, thereby missing critical opportunities for efficient and biologically relevant conservation.

3) Identify functioning ecosystems where listed species are present or have been present in the past, providing opportunities and information to develop Environmental Impact Report /Statement alternatives that avoid or minimize impacts to identified areas of ecological importance.

4) Use existing data from resource agencies to identify areas of ecological importance and important areas for state and federally-listed (endangered or threatened) species. For example, use information from local Service and CDFG offices, Service and National Marine Fisheries Service Recovery Plans for federally-listed species; California Natural Diversity Database (CNDDB) for occurrences of state listed species; and the California Wildlife Habitat Relationships database, and Areas of Conservation Emphasis (ACE) developed by CDFG (see Appendix 1).

5) Consider integrating County or Regional Habitat Conservation Plans (HCPs) and/or California Natural Community Conservation Plans (NCCPs) with your planning process. HCPs (federal) and NCCPs (state) are good examples of ecosystem based plans that incorporate regional conservation strategies for special status (such as listed) species and for obtaining current vegetation maps, species occurrences, habitat maps, protected areas, and other data.

6) Consider incorporating an "advance" time frame to identify and acquire regional conservation opportunities.

- Satisfy anticipated environmental mitigation needs early in the environmental review process, before the projects are in the final stages of approval, when requirements for specific mitigation measures can delay project approvals.

- Collaboratively, work with natural resource and infrastructure agencies to identify appropriate mitigation early in the projects' timelines, avoiding permitting and regulatory delays and allowing public mitigation dollars to stretch further by securing and conserving valuable natural resources on a more economically efficient scale.
- Create well planned, well managed, and well connected habitat reserves that reflect regional or statewide conservation priorities. Mitigation funding for transportation projects can be directed to agreed-upon habitat priorities rather than scattered among isolated mitigation projects that are not ecologically linked or sustainable. Through advance regional mitigation planning, California can grow greener as it improves its infrastructure.

Examples of Regional Conservation Approaches

By coordinating early with agencies responsible for project-level permitting and focusing mitigation on regional priority conservation opportunities, ecosystem-scale conservation needs can be met, providing more effective conservation and mitigation.

The following examples are projects that incorporate ecosystem conservation with transportation planning at a regional scale and are not meant to be prioritized in any way.

Example #1: **San Diego Regional Planning Agency (SANDAG) and the Multiple Species Conservation Program (MSCP) in southwest San Diego County.**

- This example demonstrates a "cradle to grave" approach where natural resource conservation is considered in infrastructure planning, development/construction, and maintenance and operations. It covers potential natural resource mitigation needs and provides a system to pay for those mitigation costs.
- MSCP is a comprehensive, long-term habitat conservation plan which addresses the needs of multiple species and the preservation of natural vegetation communities in San Diego County.
- Caltrans collaborated with federal and state resource agencies to develop transportation projects that are consistent with the MSCP.
- Collaboration between the transportation agencies and natural-resource agencies has resulted in the preservation of large blocks of habitat to further the build-out of the MSCP preserve.
- TransNet Program: Voter-approved extension of a $0.005 sales tax provides a funding mechanism for the up-front purchases of land and for the long-term management and monitoring of the preserves.
- SANDAG established an Environmental Mitigation Program (EMP).

- Regional sales tax funding is tied to mitigation requirements and the environmental clearance approval process for projects outlined in the Regional Transportation Plan.
- The EMP provides funding allocation category for the costs to mitigate habitat impacts for regional transportation projects, including for habitat acquisition, management, and monitoring activities as needed to help implement the Multiple Species Conservation Program and the Multiple Habitat Conservation Program (federal HCP).
- The EMP Working Group advises the Regional Planning Committee on issues related to the implementation of the EMP. Members of the working group include representatives from the City of San Diego, County of San Diego, the four SANDAG sub-regions, state and federal wildlife agencies, and several organizations representing disciplines and interests involved in the implementation of the EMP. The Regional Planning Committee advises the SANDAG Board of Supervisors.
- The EMP Working Group meets every other month.

- Memorandum of Agreement signed March 2008.
  - SANDAG entered into a Memorandum of Agreement (MOA) with the Service, the CDFG, and Caltrans formalizing the process for implementing early land mitigation.
  - A 10-year processing agreement allowing all agencies to evaluate how the EMP implements the provisions of the *TransNet* ordinance for early land mitigation.

***Example #2*: Regional Advance Mitigation Project (RAMP) and State-wide Advance Mitigation Initiative (SAMI)**

<u>RAMP</u>

- This is a multi-agency and non-governmental approach being developed to address mitigation needs required by infrastructure projects in California. RAMP incorporates both a "regional" geographic component and an "advance" time frame. The "regional" component will allow state and federal agencies to consider regional conservation priorities and evaluate the environmental impacts of several planned infrastructure projects at once. The "advance" time frame will identify regional mitigation opportunities that will satisfy anticipated mitigation requirements early in the project planning and environmental review process.

- The purposes of RAMP are:
  - to provide effective mitigation and conservation of natural resources and natural processes on a landscape, regional, or statewide scale
  - to expedite the environmental review of planned infrastructure projects
  - to increase mitigation and conservation cost efficiency and certainty

  - to facilitate the implementation of measures to mitigate the impacts of those projects by identifying and implementing mitigation measures in advance of project approval

- Collaborative partnership with California and Federal resource, regulatory, and infra-structure agencies, including but not limited to Caltrans, CDFG, California Department of Water Resources, the Service, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, The Nature Conservancy, UC Davis, and the Wildlife Conservation Board.

- Benefits to a regional ecosystem/advance mitigation approach include:
  - lower mitigation costs for the infrastructure funding agency;
  - permit streamlining where approval of mitigation is needed from regulatory agencies;
  - greater ecological and financial predictability;
  - better alignment of project mitigation with regional conservation priorities;
  - mitigation planning, management, and monitoring efficiencies;
  - enhanced benefits to sensitive species through large-scale conservation leading to higher quality habitat, improved habitat connectivity and better long-term protection; and
  - the ability to leverage and assist ongoing conservation efforts.

<u>SAMI</u>

As RAMP is more of the planning/process side of the advance mitigation concept, SAMI is Caltrans' proposal for advance mitigation implementation. An MOU is currently under development with Caltrans, CDFG and various state and federal resource agencies to incorporate landscape scale mitigation utilizing mitigation/conservation banks, in-lieu fee programs or other appropriate mitigation and/or conservation measures.

***Example #3**:* Elkhorn Slough Watershed Project

- This is a multi-agency project incorporating advance mitigation in a landscape level planning approach.
- Major capacity increasing and operational improvement projects are planned on four state highways and three local roads over the next 20 years.
- A Memorandum of Understanding (MOU) between 9 agencies including local, state, and federal agencies has been developed. The MOU establishes a process for identification and evaluation of important biological resources and agricultural resources, and for identifying funding strategies at an early stage of transportation improvement planning.

- This collaborative process has been established to facilitate development of early mitigation planning to incorporate regional-scale mitigation which could be implemented prior to traditional transportation project milestones within the Elkhorn Slough Watershed.
- An Interagency Steering Committee meets regularly.

***Example #4**:* Caltrans' 'In-House' Conservation Banks

- This approach may be useful on a smaller scale such as for rural areas.
- Caltrans collaborated with the Service to conserve large blocks of appropriate habitat for listed species that may be adversely affected from an aggregate of transportation projects in an identified geographic area.
- "In-house" conservation banks were established for the acquired parcels and incorporated a long term management plan, a conservation easement in perpetuity, and an endowment fund.
- The advantages to purchasing pre-project conservation/mitigation lands include purchasing lands at lower prices, establishing larger preserves that support multiple species, and streamlining the National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) and ESA processes. Because highways can cause significant impacts to natural resources, efforts to mitigate for the impacts can also provide significant conservation/mitigation and contribute to the preservation of key pieces of needed preserves.

Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA)

In addition to administering the ESA, the Service also has conservation responsibilities and management authority for migratory birds under the MBTA and the BGEPA.

Migratory Bird Treaty Act (MBTA)

Many species of migratory birds are protected under the MBTA. The U.S. Fish and Wildlife Service revised the List of Migratory Birds by both adding and removing numerous species. Reasons for the changes to the list include correcting misspellings, adding species based on new evidence of occurrence in the United States or U.S. territories, removing species no longer known to occur within the United States, and changing names based on new taxonomy. An accurate and up-to-date list of species protected by the MBTA is essential for regulatory purposes. A current list birds protected under this Act can be found at: http://www.fws.gov/migratorybirds/

We recommend that you identify migratory bird use in your natural resource inventory to anticipate potential development project's impacts to migratory birds in the area. Under the MBTA, nests (nests with eggs or young) of migratory birds may not be harmed, nor may migratory birds be killed. Such destruction may be in violation of the MBTA.

When developing implementation strategies, consider, as an avoidance measure, land clearing, or other surface disturbance associated with construction of proposed projects, be conducted outside the avian breeding season to avoid potential destruction of bird nests or young, or birds that breed in the area.

Bald and Golden Eagle Protection Act (BGEPA)

The bald and golden eagles are protected under the BGEPA. Bald Eagles were once listed under the ESA, and have since been recovered to a status that allowed the Service to delist them in 2007. However, the protections under the BGEPA continue to apply. Under new regulations finalized in September 2009, limited take of eagles is allowed if it is compatible with the preservation of the bald eagle and the golden eagle (regional populations are increasing or stable, and not to exclude preservation of locally important smaller populations within a region).

The new section at 50 CFR § 22.26 will govern permits to take bald eagles and golden eagles, where the taking is associated with, but not the purpose of the activity, and cannot practicably be avoided. Most take authorized under this section will be for "disturbance;" however, permits may authorize lethal take that results from but is not the purpose of an otherwise lawful activity. Section 22.27 will establish permits for removing eagle nests where (1) necessary to alleviate a safety hazard to people or eagles, (2) necessary to ensure public health and safety, (3) the nest prevents the use of a human-engineered structure, or (4) the activity or mitigation for the activity will provide a net benefit to eagles. Only inactive nests may be taken, except in safety emergencies.

The Service has established a prioritization criteria for issuing BGEA take permits. Both regulations contain issuance criteria to ensure that, except for safety emergencies, Native American religious needs are given first priority if requests for eagle take permits exceed take thresholds that are compatible with the preservation of the bald eagle or the golden eagle. Both regulations include provisions for programmatic take. Programmatic take (take that is recurring and not in a specific, identifiable timeframe and/or location) will be authorized only where it is unavoidable despite implementation of comprehensive measures developed in cooperation with the Service to reduce the take below current levels.

NATURAL RESOURCE INVENTORY – Potential Data Needs

Species Surveys/Studies

1) Recognize plants, fish, and animals do not take into account jurisdictional boundaries; thus, it is inappropriate to restrict biological evaluations in this matter. This is particularly true for larger planning areas that may affect essential behaviors such as feeding, sheltering, breeding, and migration, of a regional population of a species.

2) Recognize that survey data, although useful, have shortcomings. For example, negative survey data is often misused to establish that a species is absent from a project area. Negative surveys do not necessarily reflect a species absence from a project area because 1) some species are difficult to detect (e.g. California tiger salamander in underground burrows); 2) some species have a boom/bust population cycle, which may require multiple years of survey data (e.g. bay checkerspot butterfly); 3) surveys may be conducted during an inappropriate time of year, (e.g. non-flowering season for particular plant species); and 4) survey data may be subject to human error, such as misidentification of species.

3) CNDDB provides records of occurrences of federal and state listed species as well as other categories of sensitive/special species. Note that these records should not be considered all inclusive; they are only as good as the reported survey information sent to the CDFG database and what has been entered into the database at the time of the inquiry.

4) Federally threatened and endangered Species Lists, listed by either county or quadrangle, are available from the respective Service field office and/or their website (see Appendix 1).

Natural Resource Inventory/Mapping

1) Collect ecological data in geographic information system (GIS) or paper formats that identify natural resources located within the study boundaries and use these data to avoid sensitive habitat.

2) Use geospatial, digital, and other advanced imaging systems to evaluate environmental and social data related to infrastructure projects and to minimize project costs.

3) When assessing biological habitats, recognize that certain general habitat types may be biologically valuable, such as agriculture. For example, rice is important to the threatened giant garter snake and rangeland supports vernal pools and vernal pools associated plants and animals. Also, other habitats may not provide satisfactory long term habitat for native plants or animals, but may be important as dispersal areas.

4) Consider including adjacent habitat in biological analysis. Don't restrict biological evaluations based on jurisdictional lines.

5) Utilize existing mapping efforts and strategies. Similar to other data considerations in Scenario Planning or RTP development, natural resource data already exist for a lot of resources and should be used in an integrated fashion.

Appendix 1. Information Sources specific to Biological/Fish, Wildlife, Plants

U.S. Fish and Wildlife Service

websites for FWS field offices that work with Caltrans; access to species lists; species Recovery Plans; critical habitat; HCPs in your area; survey protocols, species expertise in your area.
http://www.fws.gov/arcata/
http://www.fws.gov/carlsbad/
http://www.fws.gov/sacramento/
http://www.fws.gov/ventura/
http://www.fws.gov/yreka/ - local knowledge but do not work with Caltrans

List of birds covered under MBTA
http://www.fws.gov/migratorybirds/intrnltr/mbta/mbtandx.html birds covered under MBTA
Bald eagle http://www.fws.gov/migratorybirds/baldeagle.htm

Species Recovery Plans: http://www.fws.gov/endangered/recovery/index.html
ECOS Interactive Mapper**:** http://www.fws.gov/endangered/recovery/index.html
Habitat Conservation Plans & Multiple Species Habitat Conservation Plans (Individual and Regional)**:** http://ecos.fws.gov/conserv_plans/public.jsp and contact your local county planning office or FWS field office
National Wetlands Inventory http://www.fws.gov/wetlands/

National Marine Fisheries Service

Species Recovery Plans**:** http://www.nmfs.noaa.gov/pr/recovery/plans.htm

Federal Highway Administration (FHWA)
Nationwide Web Biological Assessment Tool http://esafhwa.org/
Geospatial One Stop http://gos2.geodata.gov/wps/portal/gos/
National Biological Information Infrastructure(NBII) http://my.nbii.gov
American Association of State Highways and Transportation Officials (AASHTO): Paper. 2005. Early Mitigation for Net Environmental Benefit: Meaningful Off-Setting Measures for Unavoidable Impacts.
http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(10)_FR.pdf

California Department of Fish and Game

Statewide Wildlife Action Plan**:** http://www.dfg.ca.gov/wildlife/wap/report.html
Marine Protected Areas**:** http://www.dfg.ca.gov/mlpa/
Natural Community Conservation Plans: http://www.dfg.ca.gov/habcon/nccp/status.html
Data Portal http://nrm.dfg.ca.gov/

Document Library http://nrm.dfg.ca.gov/documents/Default.aspx
Biological Information Observation System (BIOS) - A web based GIS data viewer, includes California Natural Diversity Database (CNDDB) records http://bios.dfg.ca.gov/
California Wildlife Habitats Relationships Database (WHR) http://www.dfg.ca.gov/biogeodata/cwhr/
California Areas of Conservation Emphasis (ACE) http://www.dfg.ca.gov/

California Resources Agency
California Environmental Resources Evaluation System (CERES) http://ceres.ca.gov/
California Environmental Information Catalog (CEIC) http://ceic.resources.ca.gov/
California Spatial Information Library (CaSIL) http://casil.ca.gov
California Atlas – http://calatlas.ca.gov

Non-Profits / Non-Governmental Organizations
California Wilderness Coalition Missing Linkages Report**:**
http://www.calwild.org/linkages/listfigs.html
The Conservation Fund Green Infrastructure Program: http://www.greeninfrastructure.net/
Missing Linkages: California Missing Linkages Report, southern California wildlife connectivity mapping study: http://www.scwildlands.org/

California Department of Transportation and California Department of Fish and Game
Essential Habitat Connectivity Project
http://www.dot.ca.gov/hq/env/bio/meeting_info.htm

California Department of Transportation and University of California, Davis
Partnership Portal Project; concept paper completed. Concept is to improve the planning consultation process through the creation of an interactive web-based tool.
University of California, Davis
Road Ecology Center: http://roadecology.ucdavis.edu/
Elkhorn Slough Early Mitigation Partnership: http://www.elkhornslough.ucdavis.edu/

State of North Carolina
Ecosystem Enhancement Program: http://www.nceep.net/

Transportation Research Board (TRB) *(National; general to specific issues)*
http://www.trb.org/Main/Home.aspx

Appendix 2. Literature Cited

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Appendix 3. Brief Overview of 'Take' under the federal Endangered Species Act

The federal Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (ESA) prohibits the "take" of listed species. Take is defined as: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct, any threatened or endangered species without an authorization/exemption. Harass is defined as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm includes significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering.

The ESA places a variety of responsibilities on Federal agencies and individuals to ensure that planned actions do not adversely affect listed species. Section 7 of the ESA charges federal agencies to aid in the conservation of listed species (section 7 (a)(1)), and requires federal agencies to ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats (section 7(a)(2)).

Under the authority of the U.S. Federal Highways Administration, Caltrans has been delegated federal authority and thus, has the same ESA responsibilities as a federal agency. Thus, under section 7(a) (1), they have a responsibility, by carrying out programs, to participate in the conservation and recovery of listed species.

Federal agencies generally deal with these responsibilities by consulting under section 7(a)(2) with the Service before undertaking any such actions; by adopting measures to avoid and minimize, (including compensation) for any potential adverse impacts; and by obtaining an incidental take exemption. Incidental take is the take of listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant.

Non-Federal landowner's activities must also avoid jeopardy and activities must not result in take of federally listed wildlife. Non-federal parties cannot consult directly under section 7. However, there are many ways to create a "nexus" between a non-federal project and a Federal agency which allows the non-Federal party to consult indirectly through that agency. If a permit is requested or funding is received a Federal agency for a project that may affect listed species, then the agency would consult with the Service about the project. Examples include: Federal highway funds (Caltrans/FHWA) being used or a Federal wetlands (U.S. Army Corps of Engineers) permit is needed.

If there is no Federal nexus and the project may affect listed species and 'take' is likely,

the private entity may apply to the Service for an incidental take permit (pursuant to Section 10 of the ESA) and prepare a Habitat Conservation Plan that may include paying a fee to a third party to create, improve, or manage habitat off-site or to fund activities that otherwise benefit the affected species. Additionally, an incidental take permit is issued that allows them to carry out their activities in compliance with the ESA.